

ABSTRACT

The invention relates to stabilized superparamagnetic particles which consist of superparamagnetic single domain particles and aggregations of superparamagnetic particles which are stabilized with aliphatic dicarboxylic or polycarboxylic acids and which contain charged ions of chemical elements on the surface of the small superparamagnetic single-domain particles and, optionally, an additional tissue binding substance or pharmacologically effective substance. The superparamagnetic particles consist of a mixture of small superparamagnetic single domain particles have a particle size ranging from 3 to 5 nanometers and stable, degradable aggregations of small superparamagnetic particles having a particle size of 10-1000 nanometers, and are made of iron hydroxide, iron oxide hydrate, iron oxide, iron mixed oxide or iron. The novel particles can be used as bacteriostatics and radio pharmaceuticals harming tumors, in order to prevent restenosis, in order to combat inflammatory diseases, for the functional control of organs, for magnetic drug targeting, as MR contrasting agents, as magnetic ion exchangers and magnetic adsorbents for separation methods, in the production of extremely small metal particles, as magnetic particles for in vitro diagnosis, optionally in conjunction with magnetic fields.